

Academic Networking on Agroforestry Education – Experiences from Africa and Southeast Asia

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Introduction

Academic teachers and institution leaders faced a series of challenges when agroforestry education began to appear in universities and colleges over the last 20-odd years. This paper highlights as to how two academic networks—the African Network for Agroforestry Education (ANAFE), and the Southeast Asian Network for Agroforestry Education (SEANAFE)—have addressed these challenges.

The paper points out that lessons learned in academic networking on agroforestry are applicable to other cross-cutting areas of study, including plant genetic resources. It further aims to explore similarities and opportunities for collaboration between our networks. Such similarities include:

- Same players (educational institutions)
- Same back-stoppers: The CGIAR, with ICRAF and IPGRI, respectively, as network hubs
- Both agroforestry and plant genetic resources (PGR) conservation and use are rapidly evolving fields of study that involve complex and integrated issues.

The challenges

Institutional challenges

Both agroforestry and PGR conservation and use are broad-spectrum subjects. While agroforestry builds on traditional disciplines such as forestry and agriculture, PGR builds on traditional genetics. Both agroforestry and PGR conservation and use are new and rapidly evolving academic fields of study; both are cross-cutting subjects and should be embraced by a holistic approach. They integrate a much wider range of sciences than sector-oriented traditional disciplines. Both areas are backstopped by the CGIAR under ICRAF and IPGRI, respectively.

When agroforestry became an academic subject in the late 1970s and early 1980s, there was no specific discipline for it. Traditionally, universities and colleges have been, and by and large still are, organized by discipline. There was no institutional mechanism in place to deal with an integrated subject such as agroforestry. Teachers and institutions had to tackle the subject pragmatically. A common case was that teachers that had attended agroforestry courses arranged by ICRAF and others went back home and introduced agroforestry as a topic in whatever subject they happened to teach. They often added on agroforestry to various subjects, such as silviculture, soil science, forest management, farming systems, etc. There were both institutional and national education policy constraints to the teaching of agroforestry as a subject or a full programme.

Challenges related to agroforestry and plant genetic resources cover a wide spectrum: conservation and use: from genes (biotechnology, molecular genetics, genetic variation and improvement, etc.) to ecosystems (*in situ* conservation, on-farm conservation, etc.). Agroforestry blends technologies, policy and institutional aspects. It deals with both production and the environment. Agroforestry is defined not only at plot level, but at landscape level as well. This integrated view of agroforestry requires innovative approaches in curriculum development and in the teaching and learning process. It also involves a much wider range of stakeholders than 'traditional' subjects do.

Challenges in programme development

Institutional constraints need to be overcome in the teaching of a holistic approach to natural resource management. Both agroforestry and PGR conservation and use face the same traditional conservatism and resistance to change in universities.

In the past, curriculum development was often done by experts from the university system, a ministry, or by short term consultants. The teachers were implementing the curriculum, but were mostly not actively involved in its development. For a young subject where the knowledge base was quickly evolving, and where farmers' realities was a key ingredient, this top-down approach was less suitable. Also, there was a need for a flexible tool that could help continuously improve agroforestry courses, in between the major curriculum reviews.

ANAFE and SEANAFE have found that a participatory approach to curriculum development is useful in addressing these institutional constraints. Involvement of a range of stakeholders in the curriculum development process can add relevance to the curriculum.

Challenges in delivery capacity

Traditional plant breeding has relied on analysis of genetic variation, genetic improvement, biotechnology and genetic engineering. An expanded interpretation of PGR requires that new and integrated skills and competencies be developed among teachers and researchers.

Most agroforestry teachers have a background in forestry, agriculture, animal husbandry, soil science, etc. Very few are agroforestry specialists. Each institution has a small number of agroforestry teachers. They would, therefore, not enjoy the stimulating teamwork that benefits teachers of traditional disciplines. Teachers' training was needed to address these two issues.

A whole range of challenges was also involved in the teaching and learning process. Teaching materials were scarce and often not adapted to the actual level of education. Most developing country institutions do not have sufficient funds for buying books for their libraries. In Southeast Asia, there is also a language constraint in accessing materials.

Challenges in research and field linkages

New sciences, such as agroforestry and PGR have a steep 'learning curve'. In the case of agroforestry—merely some 25 year old as a science—the understanding of how agroforestry systems work is rapidly increasing. There is a constant need to feed research findings into the education system, and to involve academic institutions in agroforestry research. Since agroforestry is a practical subject where small-scale farmers are the ultimate beneficiaries, there is need for teaching and learning methods that involve field realities.

The drastic evolution of information and communication technologies offers new interfaces for learning, but also new challenges. Access to IT, and/or the costs for communication is often a constraint for smaller, remotely located institutions.

Change processes

The rapid development in all sectors of society, the complex interaction of local rural livelihood, economic development and global issues demand a forceful response by the education system. Academic institutions need to adapt their teaching and learning process and to continuously update and review their education programmes. Through these change processes, academic institutions provide graduates that can tackle tomorrow's issues (Fig. 1). Academic networking is one tool that has proved successful in facilitating these changes in the case of agroforestry education.

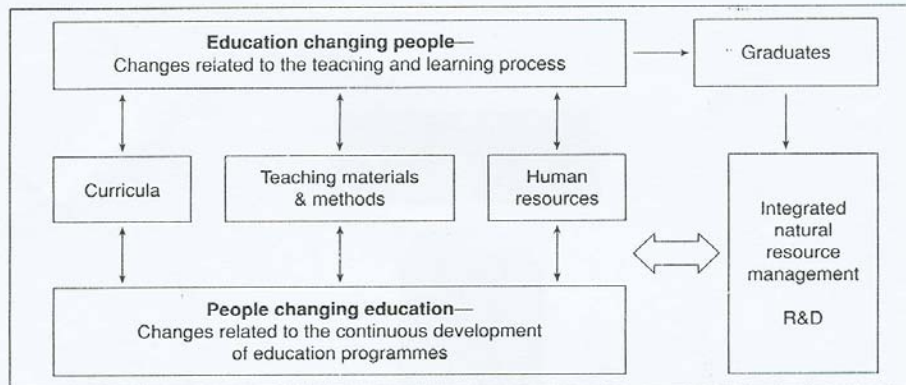


Fig. 1. Change processes addressed by academic agroforestry networks.

How the challenges were addressed through networking

No single institution could reasonably well cover the scope of agroforestry or plant genetic resources. In the case of agroforestry, academic institutions concluded that networking, via ANAFE and SEANAFE would be an efficient way of addressing issues they had in common. Collaboration would strengthen the voice of individual teachers and institutions. By working together they would be better able to develop curricula, address education policy constraints, strengthen teachers' capacity, develop and share teaching materials and link to the research and development frontline.

Network mechanisms

The mechanisms employed by ANAFE and SEANAFE in brief are:

- Needs assessment to define priority areas and to develop project proposals
- Launching meetings to agree on objectives, activities and network structure
- Institutional link to ICRAF to back-stop the network and provide global connectivity
- Implementation of network management and activities
- Continuous monitoring and evaluation to assess impact and effectiveness of network structure

ANAFE and SEANAFE experiences show that to establish and maintain a network one needs to have:

- Interested stakeholders
- Jointly identified goals (purposes) of networking
- Clear strategies for achieving the goals of the network. Normally this translates into a network structure, modus operandi, prioritizing activities, allocation of responsibilities and setting of accountability requirements
- Good coordination capacity. A network coordinator is a key person that keeps members active. A self-driven, innovative and highly motivated person should be appointed
- Quality information—this is the lifeblood of a network.
- A good balance between formal and informal communication
- Resources: The need to have resources (human, time, material and financial) to respond rapidly to needs of members should never be underestimated. It is ideal for each member to make a contribution (in kind and/or in cash) towards the management of the network. Such contributions secure members' stakes. If stakeholder contributions are not included right from the start, network sustainability is compromised. (Temu *et al.*, 2001)

The two networks have tackled these requirements in quite similar ways, and sharing of experiences between the two networks has been very useful. The key features of the two networks are displayed in Table 1.

Table 1. Key facts on ANAFE and SEANAFE Networks

	ANAFE	SEANAFE	Comments
Year of establishment	1993	1999	
Initial no of members	27	32	
Current membership	<ul style="list-style-type: none"> • Around 100 institutions in 34 countries • Open to all interested universities and colleges • Membership free of charge • Membership free of charge 	<ul style="list-style-type: none"> • 33 institutions in 5 countries: Indonesia, Laos, Philippines, Thailand and Vietnam. • Selected key institutions 	<ul style="list-style-type: none"> • Very large number of potential member institutions in SE Asia
Structure	<ul style="list-style-type: none"> • General meeting (every 2 years) • Continental Steering Committee (meets twice per year) • 4 Regional Agroforestry Training and Education Groups—RAFTs (meet twice per year) 	<ul style="list-style-type: none"> • General Meeting (every 2 year) • SEANAFE Board (meets once per year) • sub-networks took place after 5 years. • SEANAFE is moving towards 5 national networks, supported by a regional facility. 	<ul style="list-style-type: none"> • ANAFE started as one continental network. A change towards 4 regional
Coordination and daily management	<ul style="list-style-type: none"> • Coordinator at ICRAF (the Leader of ICRAF's training and education programme) • 2 Senior Fellows and one associate scientist supports activities in the 4 regions 	<ul style="list-style-type: none"> • Coordination unit of SEANAFE Secretariat at UPLB and a Project Support Office at ICRAF-Indonesia 	<ul style="list-style-type: none"> • SEANAFE's regional structure is changing to towards supporting national networks
Official document	<ul style="list-style-type: none"> • ANAFE Modus operandi 	<ul style="list-style-type: none"> • SEANAFE Charter 	
Research links	<ul style="list-style-type: none"> • ICRAF's Agroforestry Research Networks for Africa is a key partner, and is represented on the RATFs 	<ul style="list-style-type: none"> • Informal links to ICRAF's research programmes in Indonesia, Thailand and Philippines. 	
Funding	<ul style="list-style-type: none"> • Swedish Development Cooperation Agency (Sida) • Some additional funds raised by regional networks • Members contributions to activities in cash or kind 	<ul style="list-style-type: none"> • Sida 	